rusty orange suffusion of sides, cheeks and lower tail; (2) rusty brown of upper head, neck, shoulders and fore-back; (3) greater breadth and blackness of dark dorsal stripes and corresponding diminution and rustiness of white stripes; (4) absence of hoary appearance of whole upper surface seen in *luteiventris*.

Measurements: Total length, 245 mm.; tail vertebræ, 105; hind foot, 32.5. Skull; basilar length, 26.5; length of nasals, 10.5; interorbital constriction, 7.4; zygomatic expansion, 20; length of mandible, 11; greatest width of mandible, 20.

So far as I am able to examine specimens, this is the darkest representative of the *T. quadrivittatus* group. It is represented by a male and female, both adults and from the same locality. Their measurements show *felix* to be as large as, if not larger than, any of its conspecific allies.

The above newly described mammals formed part of a small collection recently made and forwarded to me by Mr. Allen C. Brooks. They demonstrate emphatically the wonderful variety which characterizes the Zoology of the mountain regions of the Pacific Slope, even in northern latitudes.—S. N. RHOADS.

Zoological News.—MAMMALIA—At the June meeting of the Linnean Society of N. S. Wales, Mr. Robert Brown read a paper on a new fossil Mammal allied to Hypsiprymnus, but resembling, in some points, the Plagiaulacidae. The remains, described under the names of *Burramys parvus*, are those of a small marsupial not larger than an ordinary mouse. The form is specially interesting in having but three true molars in each jaw, and a very large grooved premolar with serrate edge, very similar to that found in the Eocene genus Neoplagiaulax. Its affinities are dealt with at some length, and an endeavor made to trace its relationship phylogenetically. (Proceeds. Linn. Soc. N. S. W., 1895).

ENTOMOLOGY.[1]

Entomology at Springfield.—The most important entomological meeting at Springfield in connection with the A. A. A. S. was that of the Association of Economic Entomologists, August 27 and 28. The

[1] Edited by Clarence M. Weed, New Hampshire College, Durham, N. H.

President's address was delivered by Prof. J. B. Smith, after which the following papers were read:

J. M. Aldrich, Moscow, Idaho, Spraying without a pump; M. H. Beckwith, Newark, Del., The San José Scale in Delaware; F. H. Chittenden, Washington, D. C., Herbivorous Habits of certain Dermestidæ; T. D. A. Cockerell, Las Cruces, N. Mex., On the natural conditions which affect the distribution and abundance of Coccidæ; G. C. Davis, Agricultural College, Mich., Insects of the season in Michigan; C. H. Fernald, Amherst, Mass., The Gypsy Moth; C. P. Gillette, Fort Collins, Col., How shall we improve our Collections? F. L. Harvey, Orono, Me., Article on Smerinthus cerisyi; A. D. Hopkins, Morgantown, W. Va., (1) On the Study of Forest-tree Insects. (2) Some notes on observations of the season; L. O. Howard, Washington, D. C., Some shade-tree insects of Springfield and other New England towns; J. A. Lintner, Albany, New York, A paper; C. L. Marlatt, Washington, D. C., (1)The Elm-leaf Beetle in Washington. (2) Some notes on insecticides; J. B. Smith, New Brunswick, N. J., The uses of insect-lime; E. B. Southwick, New York City, (1) Economic entomological work in the parks of New York City. (2) A city entomologist and insecticides; F. M. Webster, Wooster, O., (1) Some interesting facts regarding the genus Diabrotica. (2) Importation and repression of destructive insects. (3) Insects of the year in Ohio; C. M. Weed, Durham, N. H., An important modification of the kerosene sprayer; H. E. Weed, Agricultural College, Miss. (1) Experiments with the kerosene knapsack sprayer. (2) Bisulphide of Carbon for Crayfish.

Prof. C. H. Fernald was elected President for the next year and Mr. C. L. Marlatt was re-elected Secretary, Resolutions indorsing the work of the Gypsy Moth Commission, and expressing regret at the discontinuance of *Insect Life* were passed.

In Section F. perhaps the most interesting entomological papers were those on the mouth parts of insects by Messrs. J. B. Smith and C. L. Marlatt.—C. M. W.

Pigments of Pieridæ.—Mr. F. G. Hopkins publishes[2] an abstract of a contribution to the study of excretory substances which function in ornament. The wing scales of the white Pieridæ are shown to contain uric acid, which substance bears the same relation to the scale as do the pigments in the colored Pieridæ, so that it practically functions as a white pigment. The yellow pigment found in the majority of the Pieridæ is a derivative of uric acid. The yellow pigment may be arti-

[2] Proc. Royal Soc. lvii, 1895, pp. 5 and 6.

ficially induced by heating uric acid with water in sealed tubes at high temperatures, and the identity of the natural and artificial products may be demonstrated by the similarity of their spectrum. Mr. Hopkins believes that this yellow substance, which may be called lepidotic acid, together with a closely allied red substance, will account for all the chemical pigmentation of the wing scales of the colored Pieridæ, though modifications may be produced by superadded optical effects. These uric acid derivatives, though universal on the Pieridæ, are apparently confined to this group among the Rhopalocera. This fact leads to the interesting observation that where a Pierid mimics an insect belonging to anothers family, the pigments in the two cases are chemically quite distinct. The fact that the scale pigments are really the normal excretory products of the animal utilized in ornament is emphasized by the observation that the yellow Pierids on emergence from the chrysalis are apt to void from the rectum a quantity of uric acid, colored by a yellow substance, which exactly resembles the pigment of the wing.—*Journal Royal Microscopical Society.*

Sense of Sight in Spiders.—Professor and Mrs. Peckham in continuing their studies of spiders have published[3] some extremely interesting observations upon the sense of sight. Concerning the range of vision the authors think their experiments "prove conclusively that Attidæ see their prey (which consists of small insects) when it is motionless, up to a distance of five inches; that they see insects in motion at much greater distances; and that they see each other distinctly up to at least twelve inches. The observations on blinded spiders and the numerous instances in which spiders which were close together, and yet out of sight of each other, showed that they were unconscious of each other's presence render any other explanation of their action unsatisfactory. Sight guides them, not smell."

The authors also experimented with the color sense of spiders, and reached the opinion "that all the experiments taken together strongly indicate that spiders have the power of distinguishing colors."

[3] Trans. Wisconsin Acad. X, pp. 231–261.